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Water, Energy, Waste: Integrating Themes of Sustainability Into Your Classroom

Final Lesson Plan

July 21, 2017

**Subject**: Science

**Grade**: 1st grade

**Objective**: Students will describe the needs of all living things and determine what our red worms will need to survive in their worm bin.

**Time**: 1 period (45 minutes)

**Materials:** Worm bin, nail, newspaper in strips, shredded vegetable waste, spray bottle with water, red wiggler worms, picture sort cards, large T-chart,

**Content Specific Standards:**

NGSS K-2 LS1.C Animals obtain food they need from plants or other animals. Plants need water and light.

**Danielson Framework for Teaching Competencies:**

3c Engaging Students in Learning

**Context and Student Background Knowledge:**

In our classroom we have been studying a variety of different animals with a focus on their needs for survival. This will be our first opportunity to set up a habitat for an animal we have studied and provide all of its needs in its habitat.

This lesson will also make a connection to sustainability because students will learn that this is another way to divert waste from our classroom from the waste stream.

**Procedure:**

**Introduction:**

Gathering students on the rug, start by connecting back to previous work,

“We have been learning about so many different animals and living things these past few weeks! Today we are ready to start learning about another exciting living thing, but this time I have it here in our classroom!” (Take out small opaque container of worms) I have it right here in this container and we are going to make a good habitat for them so they can be comfortable in our classroom. Turn and talk with your neighbor about what you think it is.”

Students will share out ideas. Reveal that they are worms dramatically.

Explain how red wiggler worms are similar but not the same as the earthworms we can find in our parks and gardens.

Ask, “Turn and talk to your neighbor, What are some things all living things need?”

Students share out. Teacher will chart ideas on board, make sure ideas about water, air, space, and food are present.

**Activity/Worktime:**

**Part 1: Setting up the Worm Bin**

Introduce and explain each component of the worm bin using the four main ideas of what all living things need. Use as many student volunteers as possible to help in assembly!

1. Space- introduce the physical worm bin
2. Air- poke holes into the top of the worm bin, explain how air will come through
3. Water- place bedding inside bin and have a student spray with enough water
4. Food- explain that red wiggler worms mostly like to eat parts of most fruits and vegetables

**Part 2: Picture Sort of the Needs of Red Wiggler Worms**

Divide students into groups of 5-6 and distribute sets of pictures of different fruit and vegetables, water, air, space, meat, cheese, and grains for each group.

Explain to students that it will be their job to sort out which of these items red wiggler worms need to be healthy.

**Closing/Share:**

Gathering back on the rug, ask students if there were any things in the picture sort they were not sure if red wiggler worms actually needed. If necessary, bring up how the worms actually don’t prefer to consume meat, dairy, or grains and can have only a little of some types of fruits like citrus.

**Assessment**:

Ongoing observation and assessment of work generated by the end of the period.

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|  | 4 | 3 | 2 | 1 |
| Content | Student identifies that all living things need food, water, air, and space and can give specific examples for each. | Student identifies that all living things need food, water, air, and space. | Student can identify some of the things that all living things need to survive. | Student cannot identify any of the needs of all living things. |
| Picture Sort | Student was able to identify basic needs of red wiggler worms and grapple with the items they were not sure about constructively. | Student was able to mostly identify basic needs of red wiggler worms and grapple with the items they were not sure about constructively. | Student was able to identify some basic needs of red wiggler worms. | Student was unable to identify any of the basic needs of red wiggler worms. |
| Group Work and Participation | Student worked productively in the group and contributed ideas. | Student worked productively in the group and contributed ideas. | Student mostly worked productively in the group and contributed ideas. | Student did not work productively in the group nor contribute any ideas. |

**Differentiation:**

Groups that are struggling with the picture sort can be prompted to think of the needs of all living things first, then see if they can determine if red wiggler worms would need specific items.